

Notice of Allowability

Application No.

10/765,879

Examiner

Paul Ip

Applicant(s)

MATSUBARA ET AL.

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 07/17/2006.
2. ☒ The allowed claim(s) is/are 3 and 7-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 4/11/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Paul Ip
Primary Examiner
AU 2837

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kari P. Footland on 09/08/2006.

The application has been amended as follows:

Cancel claims 1, 2, 4, 5 and 6.

3. (Currently Amended) The inverter unit according to claim 2 8, wherein the sensor detects the position or speed of the motor, the magnetic pole position of a rotor of the motor, the temperature of the motor, or the acceleration of the motor, and the sensor circuit processes signals from the sensor.

7. (New) an inverter unit grounding method comprising:
connecting an inverter unit comprising a sensor circuit to a winding of each phase of a motor and an AC power source;
converting the AC power source into DC;
switching a switching element on or off to supply current to the winding of each phase of the motor to thereby drivingly controlling the motor;
detecting conditions of the motor with a sensor;

connecting a shield braid of a shielded cable to the sensor circuit with an earth plate outside the inverter unit to reduce influence components that are generated as the switching element of the inverter unit is turned on or off; and

connecting a 0V of a circuit system to the earth plate,

wherein the 0V of the circuit system is connected to the earth plate by the shield braid of the shielded cable, causing impedance for frequency that constitutes the basis of noise upon the circuit system to decrease, thereby lessening influence of the noise upon the system.

8. (New) An inverter unit comprising:

a sensor circuit connected to a winding of each phase of a motor and an AC power source;

a converter for converting AC power source into DC;

a switching element turned on or off to supply current to the winding of each phase of the motor thereby drivingly controlling the motor;

a circuit system including at least one sensor for detecting a state of the motor; and

a shield braid of a shielded cable being connected to the sensor circuit with an earth plate outside the inverter unit,

wherein the shield braid is connected to a 0V of the circuit system and the earth plate outside the inverter unit to reduce influence components that are generated as the switch element of the inverter unit turned on or off, and

wherein the 0V of the circuit system is connected to the earth plate by the shield braid of the shielded cable, causing impedance for frequency that constitutes the basis of noise upon the circuit system to decrease, thereby lessening influence of the noise upon the system.

9. (New) An apparatus comprising:

means for connecting a 0V of a circuit system, including a sensor circuit in an inverter unit driving a motor;

a switching element turned on or off to supply current to the motor to thereby drivingly control the motor;

a circuit system including at least one sensor for detecting a state of the motor;

a shield braid of a shielded cable being connected to the sensor circuit with an earth plate outside the inverter unit; and

means for connecting the shield braid of the shielded cable to a 0V of the circuit system and the earth plate outside the inverter unit to reduce an influence of components that are generated as the switching element of the inverter unit is turned on or off, and

wherein the 0V of the circuit system is connected to the earth plate by the shield braid of the shielded cable, causing impedance for frequency that constitutes the basis of noise upon the circuit system to decrease, thereby lessening influence of the noise upon the system.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

The amendment filed on 07/17/2006 has been considered in view of the specification and the drawings of this application with respect to the references of the record. Claims 3 and 7-9 are patentable distinct from the records of this application.

Original claims 1-3, of Serial No. 2003-033618, were rejected by the Japan Patent Office for the reasons as set forth in the Notice of Reasons for Rejection filed on April 01, 2005. New claims 7-9 and amended claim 3 clearly recite subject matters patentable distinct from the references cited in the Notice of Reasons for Rejection. The references fail to teach or suggest an inverter unit comprising a sensor circuit connecting to a winding of each phase of a motor, a switching element switching on or off to supply currents to the motor windings, detecting conditions of the motor with a sensor, connecting a shield braid of a shielded cable to the sensor circuit with an earth plate outside the inverter unit, and connecting a 0V of a circuit system to the earth plate to cause impedance for frequency that constitutes the basis of noise upon the circuit system to lessening influence of the noise upon the system as recited in the claims.

The publication to Schierling discloses a reduction of interference current in a group of synchronized variable speed electric drives. Figure 2 shows the conventional grounding connection as shown in figures 2 and 3 of this application. It fails to teach or suggest connecting a 0V of a circuit system to the earth plate as recited in the claims.

Goto et al (2004/0074255 or 6,820,437) show the conventional way of connecting the shielded cable to the ground. These references fail to teach or suggest

detecting conditions of the motor with a sensor and connecting a shield braid of a shielded cable to the sensor circuit with an earth plate outside the inverter unit, and connecting a 0V of a circuit system to the earth plate as recited in the claims.

The patents to Elliot et al (5,838,877 or 5,857,060) show the conventional way of connecting the shield cable to the ground. There is no teaching to connect a 0V of a circuit system to an earth plate outside of an inverter as recited in the claims.

The patent to Williams discloses a method and apparatus for determining the charge or voltage distribution of an electrophotographic surface with a substantially zero voltage difference is maintained between the sensor and the electrophotographic surface. However, Williams's invention is diverged from the invention. Either taken Williams alone or in combination with the references of the record, these references fail to teach or suggest the inverter unit grounding method or apparatus as recited in the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


COMMUNICATION INFORMATION

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Ip whose telephone number is (571)-272-1941. The examiner can normally be reached on Monday to Friday from 6:30 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan, can be reached on (571)-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Internet correspondence **MUST** be provided with a prior written authorization by applicant in the application file record giving the Office authorization to communicate with applicant via e-mail. Without a written authorization by applicant in place, the USPTO will not respond via Internet e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C. 122.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Paul Ip
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9/11/2006